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WHAT IS CLAIMED IS:

Sub
1. A molecular adjuvant for enhancing an immune response to an immunogen comprising: a targeting ligand having binding affinity for a characteristic determinant of an antigen presenting cell, said targeting ligand being ~~cooperatively~~ functionally linked to said immunogen, whereby binding of said molecular adjuvant to said antigen presenting cell determinant activates said antigen presenting cell, effecting delivery of said immunogen to an antigen presenting pathway of said antigen presenting cell.

Sub
2. A molecular adjuvant as claimed in claim 1, wherein said targeting ligand binds specifically to a determinant comprising an immunomodulatory receptor of said antigen presenting cell.

Sub
3. A molecular adjuvant as claimed in claim 2, wherein said targeting ligand binds specifically to a receptor selected from the group consisting of C5a receptor, IFN-gamma receptor, CD21 (C3d) receptor, CD64 (Fc_gRI) receptor, and CD23 (Fc_εRII) receptor.

Sub
4. A molecular adjuvant as claimed in claim 3, wherein said targeting ligand binds specifically to a C5a receptor and is selected from the group consisting of C5a and a peptide agonist analog of C5a comprising the C-terminal ten residues of C5a.

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5. A molecular adjuvant as claimed in claim 4, wherein said targeting ligand is a peptide comprising the sequence ~~YSFKPMPLaR~~, which is SEQ ID NO:1.

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Sub
6. A molecular adjuvant as claimed in claim 1, comprising a targeting ligand and an immunogen

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having the sequence YKQGGFLGLYSFKPMPLaR.

7. A molecular adjuvant as claimed in claim 1, wherein said targeting moiety and said immunogen are linked by a spacer moiety.

8. A molecular adjuvant as claimed in claim 3, wherein said targeting ligand binds specifically to an IFN-gamma receptor and is selected from the group 10 consisting of IFN-gamma and a peptide analog of IFN-gamma comprising the N-terminal 39 residues of INF-gamma.

9. A molecular adjuvant as claimed in claim 15 8, wherein said targeting ligand is a peptide comprising a sequence selected from the group consisting of

HGTIVIESLESLNYYFNFFGIDVEEKSLFLDIWRNWQKDG,
which is Sequence I.D. No. 3; and

20 QDPYVKEAENLKKYFNAGHSDVADNGTLFGIKNWKEE, which is Sequence I.D. No. 4.

10. A molecular adjuvant as claimed in claim 1, wherein said immunogen comprises at least one 25 substance selected from the group consisting of peptides, glycopeptides, phosphopeptides, lipopeptides, proteins, glycoproteins, phosphoproteins, lipoproteins, carbohydrates, nucleic acids and lipids.

30 11. A molecular adjuvant as claimed in claim 10, wherein said immunogen comprises a peptide.

35 12. A molecular adjuvant as claimed in claim 10, wherein said peptide comprises an epitope of human mucin-1.

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5 13. A molecular adjuvant as claimed in
claim 10, wherein said immunogen comprises a protein.

10 14. A molecular adjuvant as claimed in
claim 13, wherein said protein comprises serum amyloid
A (SAA).

15 15. A molecular adjuvant as claimed in
claim 14 having the formula SAA-K-Ahx-YSFKPMPLaR,
which is SAA-conjugated SEQ ID NO:8.

16. A molecular adjuvant as claimed in
claim 1, wherein said immunogen comprises a tumor-
specific antigen.

20 17. A composition for enhancing an immune
response to an immunogen in a subject in which said
enhanced immune response is desired, said composition
comprising the molecular adjuvant of claim 1 in a
biologically compatible medium.

25 18. A method for activating an antigen
presenting cell for inducing an enhanced immune response
to an immunogen, said immunogen being delivered to the
antigen presenting pathway of said antigen presenting
cell, said method comprising binding to a characteristic
surface determinant of said antigen presenting cell a
molecular adjuvant as claimed in claim 1.

35 19. A method as claimed in claim 18,
wherein binding of said molecular adjuvant to said
antigen presenting cell induces a humoral immune
response.

40 20. A method as claimed in claim 18,
wherein binding of said molecular adjuvant to said
antigen presenting cell induces a cellular immune

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response.

21. A method as claimed in claim 18,
wherein said antigen presenting cell is selected from
5 the group consisting of monocytes, dendritic cells,
macrophages and B cells.

22. A method for eliciting an antigen
presenting cell-mediated immune response in a host
10 susceptible to infection by an antigen containing
disease causing agent, said method comprising
administering to said individual a molecular adjuvant,
as claimed in claim 1, wherein said immunogen
comprises the antigen of said disease causing agent,
in an amount effective for eliciting said immune
response.

23. A method for eliciting an immune
response to a tumor-associated antigen, said method
20 comprising administering to a host having a tumor
expressing said tumor-associated antigen a molecular
adjuvant as claimed in claim 1, wherein said immunogen
comprises said tumor-associated antigen, in an amount
effective for eliciting said immune response.

25 24. A method for the production of
antibodies to an immunogen, comprising:

20 a) immunizing an animal with an immunogenically effective amount of the molecular adjuvant of claim 1;
30 b) isolating antibodies ^{from} sera of said animal; and
c) recovering said isolated antibodies.

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